January 10, 2002

David Cousins
The Dallas Group of America, Inc.
1402 Fabricon Blvd.
Jeffersonville, IN 47130

Re: Registered Construction and Operation Status,
019-13698-00050

Dear Mr. Cousins:

The application from The Dallas Group of America, Inc., received on February 27, 2001, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following Magnesol manufacturing operation, to be located at 1402 Fabricon Blvd. in Jeffersonville, Indiana, 47130, is classified as registered:

(a) One (1) 7.5 MMBtu/hr natural gas fired spray dryer, identified as Dryer 1, with particulate emissions controlled by the PC-72 baghouse, with emissions exhausted through Stack PC-72,

(b) One (1) 15 MMBtu/hr natural gas fired spray dryer, identified as Dryer 2, with particulate emissions controlled by the PC-420 baghouse, with emissions exhausted through Stack PC-420,

(c) One (1) 0.25 MMBtu/hr natural gas fired spray dryer, identified as Pilot Dryer, with particulate emissions controlled by the PC-9 baghouse, with emissions exhausted through Stack PC-9,

(d) One (1) spray dryer product collection system consisting of two (2) baghouses identified as PC-144 and PC-80,

(e) Two (2) product classifiers equipped with two (2) product classifier baghouses, identified as PC-30 and PC-80,

(f) One (1) pneumatic product conveyor system with particulate emissions controlled by two baghouses, identified as PC-16 and PC-4,

(g) One (1) pneumatic raw material recovery and conveyor system, with emissions collected by one of three baghouses; PC-4, PC-16, or PC-144,

(h) One (1) 4.185 MMBtu/hr natural gas fired boiler, with emissions exhausted through the boiler stack,

(i) One (1) 3.8 MMBtu/hr natural gas fired water heater, and

(j) One (1) general nuisance dust collection baghouse, identified as PC-19.

The following conditions shall be applicable:

(1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuos opacity monitor in a six (6) hour period.

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from baghouses PC-420, PC-144, PC-80, PC-72, PC-30, PC-19, PC-16, PC-9, and PC-4, each, shall be limited to 0.97 lb/hr.

This registration shall supersede state construction permit 019-2507-00050, issued on March 31, 1993, and amendments 019-11167-00050, 019-11282-00050, and 019-11773-00050, issued on August 6, 1999, December 6, 1999, and January 27, 1999, respectively. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original Signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

SDF

cc: File - Clark County
Clark County Health Department
Air Compliance - Ray Schick
Permit Tracking - Janet Mobley
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name:	The Dallas Group of America, Inc.
Source Location:	1402 Fabricon Blvd., Jeffersonville, IN 47130
County:	Clark
SIC Code:	2819
Minor Source Operating Permit No.:	019-13698-00050
Permit Reviewer:	SDF

The Office of Air Quality (OAQ) has reviewed a source registration application from The Dallas Group of America, Inc. relating to the operation of their existing synthetic magnesium silicate (Magnesol) manufacturing operation.

History

On January 2, 2001, The Dallas Group of America, Inc. submitted an application for the installation of one (1) 3.8 MMBtu/hr natural gas fired water heater.

This application is being reviewed to approve the installation of the proposed water heater and to permit the source as required under 326 IAC 2-5.5-2(b). Pursuant to 326 IAC 2-5.5-2(b), any existing source that has a valid registration shall apply for approval under this rule no later than 24 months from the effective date of this rule (December 25, 2000).

The Dallas Group of America, Inc. has a valid existing permit, and qualifies for a registration, but an application for approval should have been submitted on December 25, 2000.

Dallas Group of America, Inc. is a synthetic magnesium silicate (magnesol) manufacturing operation consisting of:

(a) One (1) 7.5 MMBtu/hr natural gas fired spray dryer, identified as Dryer 1, with particulate emissions controlled by the PC-72 baghouse, with emissions exhausted through Stack PC-72,

(b) One (1) 15 MMBtu/hr natural gas fired spray dryer, identified as Dryer 2, with particulate emissions controlled by the PC-420 baghouse, with emissions exhausted through Stack PC-420,

(c) One (1) 0.25 MMBtu/hr natural gas fired spray dryer, identified as Pilot Dryer, with particulate emissions controlled by the PC-9 baghouse, with emissions exhausted through Stack PC-9,

(d) One (1) spray dryer product collection system consisting of two (2) baghouses identified as PC-144 and PC-80,

(e) Two (2) product classifiers equipped with two (2) product classifier baghouses, identified as PC-30 and PC-80,

(f) One (1) pneumatic product conveyor system with particulate emissions controlled by two baghouses, identified as PC-16 and PC-4,

(g) One (1) pneumatic raw material recovery and conveyor system, with emissions collected by one of three baghouses; PC-4, PC-16, or PC-144,

(h) One (1) 4.185 MMBtu/hr natural gas fired boiler, with emissions exhausted through the boiler stack,

(i) One (1) 3.8 MMBtu/hr natural gas fired water heater, and

(j) One (1) general nuisance dust collection baghouse, identified as PC-19.

After review of the application submitted, it is determined that the source is a registered source under 326 IAC 2-5.5-1(b)(1)(B) because the unrestricted potential to emit of oxides of nitrogen (13.50 tons/yr) are greater than 10 tons per year, but less than 25 tons per year.

Stack Summary

Stack ID	Equipment	Stack Height (ft)	Stack Diameter (ft)	Discharge Temperature (°F)	Air Flow Rate (acfm)
PC-72	7.5 MMBtu/hr Spray Dryer	45	1.42	169	6,500
PC-420	15.0 MMBtu/hr Spray Dryer	45	4.29	161	22,423
Boiler	Boiler	19	1.00	400	1,269
PC-9	Pilot Spray Dryer	20	0.67	161	500

Existing Approvals

The source was issued state construction permit (CP 019-2507-00050), on March 31, 1993. The source has been operating under this permit and amendments 019-11167-00050, 019-11282-00050, and 019-11773-00050, issued on August 6, 1999, December 6, 1999, and January 27, 2000, respectively.

Enforcement Action

An enforcement referral has been included with this application due to the source's failure to submit a new application by the December 25, 2000 applicable date specified in 326 IAC 2-5.5-2(b).

Recommendation

The staff recommends to the Commissioner that the registration be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application.

Emission Calculations

UNRESTRICTED POTENTIAL TO EMIT (UPTE) DUE TO THE MODIFICATION:

The magnesol manufacturing operation generates particulate matter (PM) and PM10 emissions from the magnesol manufacturing operation, and combustion emissions from the spray dryers, boiler, and water heater.

The following table summarizes the UPTE from the source equipment. The detailed UPTE calculations follow the summary table.

Unit	PM (tons/yr)	PM10 (tons/yr)	SO2 (tons/yr)	NOx (tons/yr)	VOC (tons/yr)	CO (tons/yr)	Comb. HAPs (tons/yr)
Magnesol Production	3.69	3.69	-	-	-	-	-
Combustion	0.30	1.00	0.10	13.50	0.70	11.30	neg.
Total	**3.99**	**4.69**	**0.10**	**13.50**	**0.70**	**11.30**	**neg.**

1. Magnesol Manufacturing Operation PM and PM10:

The following calculations determine the PM and PM10 emissions from the magnesol manufacturing operation.

The magnesol manufacturing emissions are generated by the production baghouses and final product bagging process. There are no emissions generated due to unloading of raw materials because all of the raw materials are in slurry form.

Upon review of the AP-42 emission factors, it was determined that there were no direct applicable emission factors available for the magnesol manufacturing operation. Thus, it was determined that emission factors for concrete batching operations could be used due to the similar properties of the raw materials used and similar handling methods. Therefore, the emission factors used are from AP-42, Chapter 11.12, Table 11.12-2.

a. Magnesol Manufacturing Emissions:

The following calculations determine the magnesol PM and PM10 emissions based on a maximum material throughput of 3.09 tons/hr, AP-42 emission factors, and 8760 hours of operation.

Since the raw material delivery, magnesol production, and final product are delivered via enclosed ducts with baghouses collecting the final product (integral to the process), the manufacturing emissions are determined based on emissions after controls.

3.09 tons material/hr * Ef (0.27 lb PM/ton material) * 8760 hours * 1/2000 tons PM/lb PM = 3.65 tons PM/yr
3.65 tons PM/yr * (1 - 0.99) = 0.04 tons PM/yr

PM10 is determined to be equal to PM in this case.

b. Material Deposition Emissions:

The following calculations determine the unloading PM and PM10 emissions based on a maximum material throughput of 3.09 tons/hr, AP-42 emission factors, emissions before controls, and 8760 hours of operation.

3.09 tons material/hr * Ef (0.27 lb PM/ton material) * 8760 hours * 1/2000 tons PM/lb PM = 3.65 tons PM/yr

PM10 is determined to be equal to PM in this case.

2. Combustion Emissions:

The following calculations determine the boiler, spray dryers, and water heater based on natural gas combustion, a combined maximum capacity of 30.74 MMBtu/hr, AP-42 emission factors, emissions before controls, and 8760 hours of operation.
30.74 MMBtu/hr * 8760 hr/yr * 1 E6 Btu/MMBtu * 1/1000 cf/Btu * 1/1E6 MMcf/cf * Ef lb poll/MMcf * 1/2000 ton poll/lb poll = ton poll/yr

	PM 7.6 lb/MMcf	PM10 7.6 lb/MMcf	SO2 0.6 lb/MMcf	NOx 100 lb/MMcf	VOC 5.5 lb/MMcf	CO 84 lb/MMcf
ton/yr	**0.30**	**1.00**	**0.10**	**13.50**	**0.70**	**11.30**

3. HAP Emissions:

The raw materials used at the source are sodium silicate, magnesium oxide, and sulfuric acid. The raw materials are not regulated hazardous air pollutants and the production reactions do not generate any hazardous air pollutant emissions.

The combustion of natural gas will generate negligible amounts of hazardous air pollutants.

Therefore, it is determined that there are only negligible amounts of hazardous air pollutants at the source.

EMISSIONS AFTER CONTROLS:

The raw material deposition emissions are controlled. These emissions are controlled by baghouse systems, each, with an overall control efficiency of 99%.

Thus, the PM and PM10 emissions are determined as follows:

Emissions After Controls (tons PM/yr) = Emissions Before Controls * (1 - 0.999) = tons PM/yr

= (3.65 tons PM/yr) * (1 - 0.99) = 0.04 tons PM/yr

PM10 is determined to be equal to PM in this case.

The PM(PM10) emissions from the magnesol production operation are already based on emissions after controls and are determined to be 0.04 tons/yr.

All other pollutant emissions are uncontrolled.

Unit	PM (tons/yr)	PM10 (tons/yr)	SO2 (tons/yr)	NOx (tons/yr)	VOC (tons/yr)	CO (tons/yr)	Comb. HAPs (tons/yr)
Magnesol Production	0.08	0.08	-	-	-	-	-
Combustion	0.30	1.00	0.10	13.50	0.70	11.30	neg.
Total	**0.38**	**1.08**	**0.10**	**13.50**	**0.70**	**11.30**	**neg.**

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA." This table reflects the PTE before controls due to the modification based on the above estimated emissions calculations. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	3.99
PM-10	4.69
SO_2	0.10
VOC	0.70
CO	11.30
NO_x	13.50

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

Pollutant	Potential To Emit (tons/year)
Total Combined HAPs	neg.

Level of Permit Justification

The Dallas Group of America, Inc. submitted an application solely to permit a 3.8 MMBtu/hr natural gas fired water heater. However, upon review of the source file, it was determined that the entire source, not just the boiler, required permitting because 326 IAC 2-5.5-2(b) requires all sources with a valid permit to submit a new application for approval no later than 24 months after the effective date of the rule.

After review of the source application, it is determined that the source should be permitted via a registration pursuant to 326 IAC 2-5.5-1(b)(1)(B) because the unrestricted potential to emit of oxides of nitrogen (NOx) are greater than 10 tons per year, but less than 25 tons per year.

County Attainment Status

The source is located in Clark County.

Pollutant	Status
PM_{10}	attainment or unclassifiable
SO_2	attainment or unclassifiable
NO_2	attainment or unclassifiable
Ozone	maintenance attainment
CO	attainment or unclassifiable
Lead	attainment or unclassifiable

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC

emissions are considered when evaluating the rule applicability relating to the ozone standards. Clark County has been designated as maintenance attainment for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Clark County has been classified as attainment or unclassifiable for all criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(c) Fugitive Emissions

Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Unit	PM (tons/yr)	PM10 (tons/yr)	SO2 (tons/yr)	NOx (tons/yr)	VOC (tons/yr)	CO (tons/yr)	Comb. HAPs (tons/yr)
Magnesol Production	0.08	0.08	-	-	-	-	-
Combustion	0.30	1.00	0.10	13.50	0.70	11.30	neg.
Total	**0.38**	**1.08**	**0.10**	**13.50**	**0.70**	**11.30**	**neg.**

PSD Major Levels	250	250	250	250	250	250	-
Part 70 Major Levels	-	100	100	100	100	100	25

(a) This existing source is not a major PSD stationary source because no regulated pollutant emissions are greater than their respective major source levels and the source is not one of the 28 listed source categories.

(b) This existing source is not a Title V major stationary source because no criteria pollutant potential to emit (PTE) exceeds the applicable level of 100 tons/yr, no single hazardous air pollutant PTE exceeds the applicable levels of 10 tons/yr, and the combined hazardous air pollutant PTE does not exceed the applicable level of 25 tons/yr.

Federal Rule Applicability

New Source Performance Standards (NSPS):

There are no New Source Performance Standards (326 IAC 12 and 40 CFR Part 60) that apply to the source.

National Emission Standards for Hazardous Air Pollutants (NESHAPs):

There are no National Emission Standards for Hazardous Air Pollutants (326 IAC 14 and 20 and 40 CFR Part 61 and 63) that apply to this source.

State Rule Applicability

Entire State Rule Applicability:

326 IAC 1-6-3 (Preventive Maintenance Plan):

The source is not required to have a preventive maintenance plan for the emission units and control devices of the source because the source is not being permitted under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 2-4.1 (HAP Major Sources)

This source is not subject to the requirements of 326 IAC 2-4.1 because no single hazardous air pollutant (HAP) emissions exceed 10 tons per year, and the combined HAP emissions are less than 25 tons per year.

326 IAC 2-6 (Emission Reporting):

This source is not subject to 326 IAC 2-6 (Emission Reporting), because it is not in one of the listed source categories, and does not emit more than 100 tons per year of any regulated pollutants.

326 IAC 5-1-2 (Opacity Limitations):

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity) monitor in a six (6) hour period.

Individual State Rule Applicability

326 IAC 6-1-2 (PM Limitations):

Although this source is located in Clark County, this source is not subject to 326 IAC 6-1-2 because the potential and actual PM emissions are less than the respective applicable levels of 100 and 10 tons per year.

326 IAC 6-3-2 (PM Limitations):

Pursuant to 326 IAC 6-3-2(a), the particulate matter (PM) emissions for a process weight rate of 3.09

tons/hr, is determined to be 8.73 lb/hr.
PM Emissions (tons/hr) = 4.10 * (3.09 tons/hr)^0.67 = 8.73 lb PM/hr

The magnesol manufacturing operation has 9 baghouses. The emissions from the baghouses shall be based on $1/9^{th}$ of the hourly rate, or 0.97 lb PM/hr, each.

Conclusion

The proposed Magnesol manufacturing operation shall be constructed and operated pursuant to the conditions specified in exemption **019-13698-00050**.